Amendments to the Claims

Please cancel Claims 16-19, 23, 25, 42-45, 49, 53, 54, 66-69, 73, 74, 76 and 77. Please amend Claims 1, 2, 5-8, 21, 27, 28, 30, 31, 34 and 55-59. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Currently amended) A recombinant retroviral vector comprising, in operable linkage,
   a) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and
   b) one or more coding sequences which encode a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, cecropin, prececropin, preprocecropin, magainin, a part thereof, an analogue thereof, a homologue thereof and a combination thereof.

2. (Currently amended) A recombinant retroviral vector comprising in operable linkage,
   a) a 5' long terminal repeat region comprising the structure U3-R-U5;
   b) one or more of said coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, cecropin, prececropin, preprocecropin, magainin, a part thereof, an analogue thereof, a homologue thereof and a combination thereof; and
   c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence, followed by the R and U5 region to undergo promoter conversion.

3. (Canceled)

4. (Original) The recombinant vector according to Claim 2, wherein said polylinker sequence comprises at least one unique restriction site and, optionally, at least one insertion of a heterologous DNA fragment.

5. (Currently amended) A recombinant retroviral vector comprising in operable linkage,

a) a 5' long terminal repeat region comprising the structure U3-R-U5;

b) one or more coding sequences wherein at least one sequence encodes for at least one naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, cecropin, prececropin, preprocecropin, magainin, a part thereof, an analogue thereof, a homologue thereof and a combination thereof; and

c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence which comprises at least one unique restriction site and at least one insertion of a heterologous DNA fragment which regulates the expression of at least one of the coding sequences of said vector, and comprises at least one or more elements selected from the group consisting of: regulatory elements and promoters.

6. (Currently amended) The recombinant retroviral vector according to Claim 1 further comprising at least one non-coding sequence selected from the group consisting of: regulatory elements and promoters, which regulate the expression of at least one of the coding sequences.

7. (Currently amended) The recombinant retroviral vector according to Claim 6, wherein said regulatory elements and promoters are regulatable by transacting molecules.

8. (Currently amended) The recombinant retroviral vector according to Claim 4, wherein said heterologous DNA fragment encodes a peptide selected from the group consisting of

marker peptides, therapeutic peptides, cell cycle regulatory peptides, tumor suppressor peptides, antiproliferation peptides and cytokines.

9. (Previously presented) A recombinant retroviral vector system comprising:

a) a recombinant vector comprising, in operable linkage,

i) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

ii) one or more coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, cecropin, prececropin, preprocecropin, magainin, a part thereof, an analogue thereof, a homologue thereof and a combination thereof; and

b) a packaging cell line harboring at least one retroviral construct coding for proteins required for said retroviral vector to be packaged.

10. (Original) The recombinant retroviral vector system according to Claim 9, wherein said retroviral vector comprises, in operable linkage,

a) a 5' long terminal repeat region comprising the structure U3-R-U5;

b) one or more of said coding sequences; and

c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence, followed by the R and U5 region to undergo promoter conversion.

11. (Previously presented) A retroviral particle produced by the recombinant retroviral vector system according to Claim 9 after transfecting the packaging cell line with the retroviral vector.

12. (Previously presented) A retroviral provirus produced by infection of target cells with a recombinant retroviral particle according to Claim 11 whereby the U3 sequence is duplicated during the process of reverse transcription in the infected target cell and appears in the 5' long terminal repeat and the 3' long terminal repeat of the resulting provirus, and the U5 of the 5' long terminal repeat is duplicated during the process of reverse transcription in the infected target cell and appears in the 3' long terminal repeat and in the 5' long terminal repeat of the resulting provirus.

13. (Original) The retroviral provirus of Claim 12 wherein said polylinker comprises heterologous DNA.

14. (Previously presented) A method for introducing nucleotide sequences into an isolated cell population comprising infecting the cell population with the recombinant retroviruses produced by the recombinant retroviral vector system according to Claim 9.

15. (Original) The method of Claim 14 wherein the cell population is selected from the group consisting of: human cells and animal cells.

16-19. (Canceled)

20. (Previously presented) A mRNA of a retroviral provirus produced by infection of target cells with a recombinant retroviral particle from a recombinant retroviral vector system comprising:

a) a recombinant vector comprising, in operable linkage,

1. retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and
2. one or more coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative

thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, cecropin, prececropin, preprocecropin, magainin, a part thereof, an analogue thereof, a homologue thereof and a combination thereof; and

b) a packaging cell line harboring at least one retroviral construct coding for proteins required for said retroviral vector to be packaged.

21. (Currently amended) A RNA produced by a recombinant retroviral vector wherein said vector comprises, in operable linkage,

a) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

b) one or more coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, cecropin, prececropin, preprocecropin, magainin, a part thereof, an analogue thereof, a homologue thereof and a combination thereof.

22. (Previously presented) An isolated host cell infected with a virion according to Claim 11.

23-25. (Canceled)

26. (Previously presented) A non-human host cell infected with a virion according to Claim 11.

27. (Currently amended) A recombinant retroviral vector comprising, in operable linkage,

a) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

b) one or more coding sequences which encode a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, a part thereof, an analogue thereof, a homologue thereof, and a combination thereof.

28. (Currently amended) A recombinant retroviral vector comprising in operable linkage,

a) a 5' long terminal repeat region comprising the structure U3-R-U5;

b) one or more of said coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, a part thereof, an analogue thereof, a homologue thereof, and a combination thereof; and

c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence, followed by the R and U5 region to undergo promoter conversion.

29. (Canceled)

30. (Currently amended) The recombinant retroviral vector according to Claim 28, wherein said polylinker sequence comprises at least one unique restriction site and, optionally, at least one insertion of a heterologous DNA fragment.

31. (Currently amended) A recombinant retroviral vector comprising in operable linkage,

a) a 5' long terminal repeat region comprising the structure U3-R-U5;

b) one or more of said coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, a part thereof, an analogue thereof, a homologue thereof, and a combination thereof; and

c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence which comprises at least one unique restriction site and at least one insertion of a heterologous DNA fragment which regulates the expression of at least one of the coding sequences of said vector, and comprises at least one or more elements selected from the group consisting of: regulatory elements and promoters.

32-33. (Canceled)

34. (Currently amended) The recombinant retroviral vector according to Claim 30, wherein said heterologous DNA fragment encodes a peptide selected from the group consisting of marker peptides, therapeutic peptides, cell cycle regulatory peptides, tumor suppressor peptides, antiproliferation peptides and cytokines.

35. (Previously presented) A recombinant retroviral vector system comprising:

a) a recombinant vector comprising, in operable linkage,

i) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

ii) one or more coding sequences wherein at least one sequence encodes for at least one naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, a part thereof, an analogue thereof, a homologue thereof, and a combination thereof; and

b) a packaging cell line harboring at least one retroviral construct coding for proteins required for said retroviral vector to be packaged.

36. (Previously presented) The recombinant retroviral vector system according to Claim 35, wherein said retroviral vector comprises, in operable linkage,

a) a 5' long terminal repeat region comprising the structure U3-R-U5;

b) one or more of said coding sequences; and

c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence, followed by the R and U5 region to undergo promoter conversion.

37. (Previously presented) A retroviral particle produced by the recombinant retroviral vector system according to Claim 35 after transfecting the packaging cell line with the retroviral vector system.

38. (Previously presented) A retroviral provirus produced by infection of target cells with a recombinant retroviral particle according to Claim 37 whereby the U3 sequence duplicated during the process of reverse transcription in the infected target cell and appears in the 5' long terminal repeat and the 3' long terminal repeat of the resulting provirus, and the U5 of the 5' long terminal repeat duplicated during the process of reverse transcription in the infected target cell and appears in the 3' long terminal repeat and in the 5' long terminal repeat of the resulting provirus.

39. (Previously presented) The retroviral provirus of Claim 38 wherein said polylinker comprises heterologous DNA.

40. (Previously presented) A method for introducing nucleotide sequences into an isolated cell population comprising infecting the cell population with the recombinant retroviruses produced by the recombinant retroviral vector system according to Claim 35.

41-45. (Canceled)

46. (Previously presented) A mRNA of a retroviral provirus produced by infection of target cells with a recombinant retroviral particle from a recombinant retroviral vector system comprising:

a) a recombinant vector comprising, in operable linkage

i) a retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

ii) one or more coding sequences wherein at least one sequence encodes for at least one naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, a part thereof, an analogue thereof, a homologue thereof, and a combination thereof; and

b) a packaging cell line harboring at least one retroviral construct coding for proteins required for said retroviral vector to be packaged.

47. (Previously presented) A RNA produced by a vector recombinant retroviral vector system comprising:

a) a recombinant vector comprising, in operable linkage,

i) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

ii) one or more coding sequences wherein at least one sequence encodes for at least one naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: melittin, premelittin, prepromelittin, a part thereof, an analogue thereof, a homologue thereof, and a combination thereof; and

b) a packaging cell line harboring at least one retroviral construct coding for proteins required for said retroviral vector to be packaged.

48. (Previously presented) An isolated host cell infected with a virion according to Claim 37.

49-51. (Canceled)

52. (Previously presented) A non-human host cell infected with a virion according to Claim 47.

53-54. (Canceled)

55. (Currently amended) A recombinant retroviral vector comprising, in operable linkage,

a) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

b) one or more coding sequences which encode a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: cecropin, prececropin, preprocecropin, SB-37, Shiva-1, a part thereof, an analogue thereof, a homologue thereof, and a combination thereof.

56. (Currently amended) A recombinant retroviral vector comprising in operable linkage,

a) a 5' long terminal repeat region comprising the structure U3-R-U5;

b) one or more of said coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: cecropin, prececropin, preprocecropin, a part thereof, an analogue thereof, a homologue thereof, and a combination thereof; and

c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence, followed by the R and U5 region to undergo promoter conversion.

57. (Currently amended) The recombinant retroviral vector according to Claim 56, wherein said polylinker sequence comprises at least one unique restriction site and, optionally, at least one insertion of a heterologous DNA fragment.

58. (Currently amended) A recombinant retroviral vector comprising in operable linkage,

a) a 5' long terminal repeat region comprising the structure U3-R-U5;

b) one or more coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof, wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: cecropin, prececropin, preprocecropin, a part thereof, an analogue thereof, a homologue thereof and a combination thereof; and

c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence which comprises at least one unique restriction site and at least one insertion of a heterologous DNA fragment which regulates the expression of at least one of the coding sequences of said vector, and comprises at least one or more elements selected from the group consisting of: regulatory elements and promoters.

59. (Currently amended) The recombinant retroviral vector according to Claim 57, wherein said heterologous DNA fragment encodes a peptide selected from the group consisting of marker peptides, therapeutic peptides, cell cycle regulatory peptides, tumor suppressor peptides, antiproliferation peptides and cytokines.

60. (Previously presented) A recombinant retroviral vector system comprising:

a) a recombinant vector comprising, in operable linkage,

i) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

ii) one or more coding sequences wherein at least one sequence encodes for at least one naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: cecropin, prececropin, preprocecropin, a part thereof, an analogue thereof, a homologue thereof, and a combination thereof; and

b) a packaging cell line harboring at least one retroviral construct coding for proteins required for said retroviral vector to be packaged.

61. (Previously presented) The recombinant retroviral vector system according to Claim 60, wherein said retroviral vector comprises, in operable linkage,

a) a 5' long terminal repeat region comprising the structure U3-R-U5;

b) one or more of said coding sequences; and

c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence, followed by the R and U5 region to undergo promoter conversion.

62. (Previously presented) A retroviral particle produced by the recombinant retroviral vector system according to Claim 60 after transfecting the packaging cell line with the retroviral vector system.

63. (Previously presented) A retroviral provirus produced by infection of target cells with a recombinant retroviral particle according to Claim 62 whereby the U3 sequence duplicated during the process of reverse transcription in the infected target cell and appears in the 5' long terminal repeat and the 3' long terminal repeat of the resulting provirus, and the U5 of the 5' long terminal repeat duplicated during the process of reverse transcription in the infected target cell and appears in the 3' long terminal repeat and in the 5' long terminal repeat of the resulting provirus.

64. (Previously presented) The retroviral provirus of Claim 63 wherein said polylinker comprises heterologous DNA.

65. (Previously presented) A method for introducing nucleotide sequences into an isolated cell population comprising infecting the cell population with the recombinant retroviruses produced by the recombinant retroviral vector system according to Claim 60.

66-69. (Canceled)

70. (Previously presented) A mRNA of a retroviral provirus produced by infection of target cells with a recombinant retroviral particle from a recombinant retroviral vector system comprising:

a) a recombinant vector comprising, in operable linkage,

i) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

ii) one or more coding sequences wherein at least one sequence encodes for at least one naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: cecropin, prececropin, preprocecropin, a part thereof, an analogue thereof, a homologue thereof, and a combination thereof; and

b) a packaging cell line harboring at least one retroviral construct coding for proteins required for said retroviral vector to be packaged.

71. (Previously presented) A RNA produced by a vector wherein said vector comprises, in operable linkage,

a) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

b) one or more coding sequences wherein at least one sequence encodes for at least one naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof wherein the antimicrobial peptide or derivative thereof is selected from the group consisting of: cecropin, prececropin, preprocecropin, a part thereof, an analogue thereof, a homologue thereof, and a combination thereof.

72. (Previously presented) An isolated host cell infected with a virion according to Claim 62.

73-74. (Canceled)

75. (Previously presented) An isolated host cell infected with a virion according to Claim 62.

76-77. (Canceled)